Strategic Energy Management for Industry

EnergyTrust of Oregon

Efficiency for Industry & Agriculture

We serve:

- Industrial & Manufacturing Facilities
- Agriculture: Nurseries, Dairies, Irrigators
- Water and Wastewater Utilities

EnergyTrust of Oregon

Production Efficiency Program

We offer:

- Program Delivery Contractors (PDCs) make participation easy
  - Customer outreach, engagement and support
  - Facility assessments – identify energy savings opportunities
  - Project application and documentation
  - Assistance with applications for Oregon Business Energy Tax Credit

- No-cost technical assistance
  - Technical and economic analysis of potential capital projects
  - Enhanced technical services to reduce energy waste in O&M
  - Training of site leadership and staff for continuous energy improvement

- **Cash incentives to buy down costs of energy saving projects**

EnergyTrust of Oregon

Industry & Agriculture

Cash Incentives:

- Custom Projects: $0.25/kWh and $1/therm first year savings, up to 50% of project costs
- Custom O&M: $0.08/kWh, up to 50% of project cost
- Custom < 1 yr payback: $.02/kWh
- Lighting Projects: 35% of project costs, up to $0.17/kWh
- Green Motor Rewinding: $1/hp
- Plus standard incentives for compressed air accessories, insulation, and other HVAC equipment

EnergyTrust of Oregon

2010 Goals and Budget

Production Efficiency 2010 budget = $25 million

2010 Stretch Goals: 12 aMW and 890,000 therms

Progress towards stretch as of 9/1/10:

Strong 2010 pipeline, 10% over stretch goals

Strategic Energy Management & O&M providing

> 25% of savings in 2010

EnergyTrust of Oregon

Strategic Energy Management

- SEM: An umbrella term referring to a variety of management practices that can increase production efficiency, including
  - Using energy and production data to tune operations, reduce energy intensity & reduce energy costs
  - Continuous improvement approaches and tools for engaging employees, equipping champions and enabling sponsors

  - IEI: Industrial Efficiency Improvement, one of Energy Trust's 2 year old SEM pilots

EnergyTrust of Oregon

Why is it Strategic for Energy Trust?

- Mature programs, but much savings potential still from repeat participation of large energy users.

- EE planning at these sites often non-existent, energy waste is common. Technical staff, but with need for assistance ie, training, technical support.

- Meet Goals: Economy slowed capital spending but sites still need to save $ – motivated to engage in behavioral/ O&M efforts to save energy.

- Previous development and proof of concept from NEEA Continuous Energy Improvement (CEI) efforts since 2005

Energy Trust of Oregon

Diversification of Sources of Savings

Table 1: Reportable Savings by Project Track and Year

Project Track	2004	2005	2006	2007	2008	2009	2010*
Custom	60,227,215	65,727,121	54,505,721	29,530,071	46,662,463	38,275,336	55,533,763
Calculated	0	9,853,987	9,274,225	12,477,885	13,941,905	23,299,069	27,992,863
Prescriptive	0	509,946	1,006,571	1,860,869	1,397,202	1,976,004	1,136,940
O&M (includes IEI & KB)	0	0	0	0	1,564,770	5,917,939	27,725,738
Totals	**60,227,215**	**76,091,054**	**64,786,517**	**43,868,825**	**63,566,340**	**69,468,348**	**112,389,304**

Excludes mega-projects

**Completed as of 7/10 + Pipeline*

EnergyTrust of Oregon

Goals and Objectives of the IEI pilot

- Increased awareness of energy use and efficiency opportunities, increased management/ executive commitment.
- Energy Savings
  - Direct energy savings from low and no cost actions (behavioral, O&M) to reduce energy waste.
  - Increased ability to implement capital efficiency projects in the future
- Persistence of SEM practices in the organization and persistence of savings

EnergyTrust of Oregon

Structure of the Pilot

- 10 – 12 non-competing industrial sites in each Cohort
  - 1st Cohort completed 4/10, 2nd completing 11/10
- One year of training and technical support
  - Peer support network structure for 8 – 10 live and webinar trainings over 10 month period
  - One on one technical support in between to establish baselines and energy models, and to help implement other training material.

EnergyTrust of Oregon

Structure of the Pilot (cont.)

- At least 2 Champions plus Executive Sponsor committed per site.
- Live trainings are often hosted by participants at their sites, include site tours
- Training topics include goal setting; understanding energy use; energy scan events; monitoring, tracking and reporting; identifying energy saving opportunities

EnergyTrust of Oregon

What was achieved?

- 13,508,600 working kWh in savings, net of capital projects
- Participants saved 1.8% to 18.3%
  - Average 7.9% energy savings cohort
- Very high customer satisfaction
  - Participant goals were mostly achieved
  - Developing energy tracking and reporting capabilities was highest value activity

EnergyTrust of Oregon

Data and Other Information Outputs

- Monitoring, Tracking & Reporting (MT&R) kicks off the IEI
  - Develop baseline & regression analysis to solve for key production variables
  - Develop predictive models and track changes from predicted.
    - Analysis at the meter level using interval data and model normalized for key variables. (IPMVP Option D)
- Opportunity register logs dates and actions taken to reduce energy use.
- Matching opportunity register actions to inflections in modeled energy use is basis for claimed savings by program.

EnergyTrust of Oregon

Data and Other Information Outputs

- MT&R models are given to participants early in process, along with training on how to use them to tune operational efficiency.

- These energy tracking tools provide highest value to participants according to evaluation.

- A key sign of success is when the participants “own” the model – keep entering data and using it to drive decision making, make improvements and track progress towards goals.

EnergyTrust of Oregon

Planning for Future IEI

- Desired Outcomes from 3rd Cohort & ongoing
  - Comprehensive and deep energy savings
  - 1 Cohort per year; Average > 5 % direct energy savings per site

- Role of IEI within PE program design
  - One of the custom and SEM offerings available through the PE program, IEI is most comprehensive and has proven effective in pilot.
  - Participants specially recruited based on savings potential and organizational readiness for a management system approach.

EnergyTrust of Oregon

Energy Trust Industry and Ag Contacts

Sector Lead
Kim Crossman
Kim.crossman@energytrust.org
503.459.4074

Custom track, Med/ Large Industry
Ray Hawksley
Ray.hawksley@energytrust.org
503.445.2941

All projects, general inquiries
Eric Wilson
Eric.wilson@energytrust.org
503.459.4061

Small industrial or agriculture
Ted Light
ted.light@energytrust.org
503.445.7643

EnergyTrust of Oregon